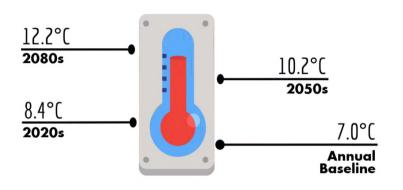
THE CITY OF WATERLOO **FUTURE CLIMATIC PROJECTIONS**

April 2018



ANNUAL MEAN TEMPERATURES

Mean, minimum & maximum daily temperatures are projected to significantly increase in every season.

0.5°(**2080**s 11.7°C SEASONAL MEAN TEMPERATURES 2080s 9.9°C -1.6°C 2050s 2050s -3.6°C 8.1°0 2020s 2020s -5.2°C 5.8°C Baseline **Baseline** WINTER December-February SPRING March-May 24.1°C 12.4°C 2080s 2080s 21.9°C 10.3°C 2050s 2050s 20.1°C 8.8°C 2020s 2020s 18.8°C 8.5°C Baseline Baseline FALL September-November SUMMER June-August

DAYS WITH FREEZE-THAW CYCLES



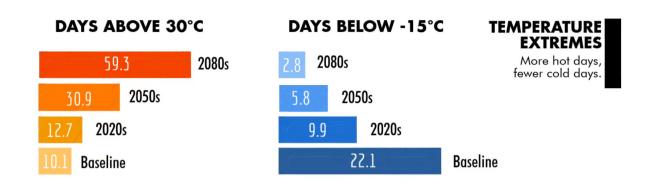
Baseline 2020s

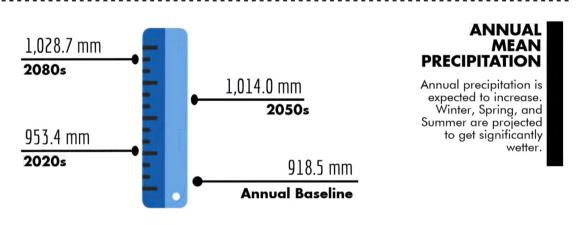


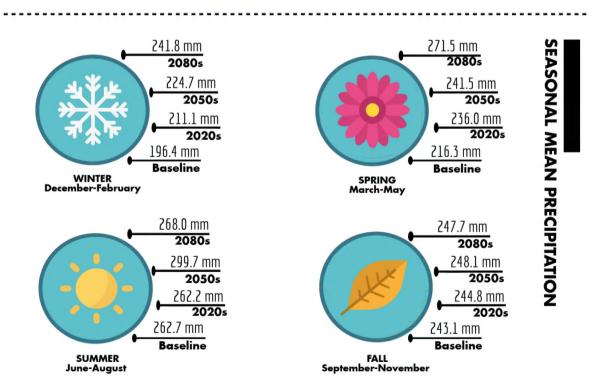
2050s 2080s

FREEZE-THAW **CYCLES**

More freeze-thaw days expected, with an eventual slight decline.







ANNUAL NUMBER OF DRY SPELLS

14.0 Baseline

13.2 2020s 13.2 2050s

2080s

13.3

DRY SPELLS

Dry spells are defined as periods of 6 or more consecutive days with no precipitation.

Compared to the 2000s historical averages, frequency of wind gusts greater than

40 km/h
are projected to increase by

10-20%



...and wind gusts greater than

70 km/h
are projected to increase by

20-40%

WIND

Severe wind gust events are expected to increase in both frequency and magnitude by the end of the century.

Precipitation events in general are projected to become more intense and extreme.

MAXIMUM TOTAL PRECIPITATION FOR A 5-YEAR RETURN PERIOD



Max 1-day total: 66.5 mm Max 5-day total: 92.0 mm 2020s

Max 1-day total: 78.0 mm Max 5-day total: 112.9 mm 2050s

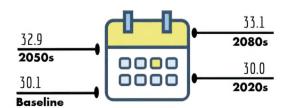
Max 1-day total: 66.9 mm Max 5-day total: 102.2 mm 2080s

PRECIPITATION

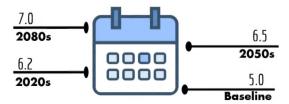
EVENTS

Max 1-day total: 67.4 mm Max 5-day total: 106.7 mm

DAYS WITH PRECIPITATION OVER 10 mm



DAYS WITH PRECIPITATION OVER 25 mm



WINTER PRECIPITATION EVENTS

ANNUAL MEAN SNOWFALL

222.1 cm 191.4 cm 173.0 cm 123.2 cm Baseline 2020s 2050s 2080s

FREEZING RAIN

Freezing rain events are predicted to increase by

40% 45% by the year 5050 2080

* Baseline period: 1990s (1981-2010); Projection periods: 2020s (2011-2040), 2050s (2041-2070), 2080s (2071-2100).

Source:

Interdisciplinary Centre on Climate Change & University of Waterloo (2015). Localized Climate Projections for Waterloo Region.

